

Claims

1. A hydraulic coupler for a fuel injection valve, having a booster piston (6) that has the capacity to be coupled to an actuator (4), in particular a piezoelectric actuator, and having an additional booster piston (7) that has the capacity to be coupled to a nozzle needle, in which a lifetime filling of a hydraulic fluid is provided between the two booster pistons (6, 7) to hydraulically couple the two booster pistons (6, 7) to each other, characterized in that one end of one of the booster pistons (7) is guided in an end of the other booster piston (6) and a booster chamber (14), which is situated between the end (12) of the one booster piston (7) and the other booster piston (6), communicates with an additional enclosure (15) for hydraulic fluid, which is sealed shut by means of a spring/sealing element (17).
2. The coupler according to claim 1, characterized in that the one booster piston (7) contains a connecting conduit (28, 32) that connects the booster chamber (14) to the additional enclosure (15) for hydraulic fluid.
3. The coupler according to claim 2, characterized in that the connecting conduit (28, 32) is equipped with a throttle (29).
4. The coupler according to claim 3, characterized in that the throttle (29) is rounded on one side in the filling direction.

5. The coupler according to one of claims 2 through 4, characterized in that the connecting conduit has a through hole (28) that extends in the longitudinal direction of the one booster piston (7).
6. The coupler according to claim 5, characterized in that the through hole (28) is sealed shut by a sealing element (34) at the end of the one booster piston (7) oriented away from the booster chamber (14).
7. The coupler according to one of the preceding claims, characterized in that the additional enclosure (15) for hydraulic fluid is comprised of an annular chamber situated radially outside the one piston (7).
8. The coupler according to claim 7, characterized in that the annular chamber (15) is delimited in the axial direction by the other piston (6) and by a stationary housing part (1).
9. The coupler according to claim 8, characterized in that a spring element (24) is clamped between the other piston (6) and the stationary housing part (1).
10. The coupler according to one of the preceding claims, characterized in that the additional enclosure (15) for hydraulic fluid is delimited at the radial outside by a convoluted bellows (17).

11. The coupler according to claim 10, characterized in that the convoluted bellows (17) is deformable in the radial direction.

12. A fuel injection valve equipped with a hydraulic coupler according to one of the preceding claims.